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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/622,414	07/18/2003	Peter Massaro	P00728.70009.US (REH)	4161

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EXAMINER

NAGPAUL, JYOTI

ART UNIT	PAPER NUMBER
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1743

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/31/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/622,414

Applicant(s)

MASSARO, PETER

Examiner

Jyoti Nagpaul

Art Unit

1743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 8-10, 13 and 16-18 is/are rejected.
- 7) ☒ Claim(s) 5-7, 11-12, 14-15, 19-23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

In light of applicant's amendments to claims 10-23 and are now presently drawn to elected claims 1-9, examiner has withdrawn the restriction.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1-4 and 8-10** are rejected under 35 U.S.C. 102(b) as being anticipated by Astle (US 5525302).

Astle teaches a material handling tool comprising a tool body (20), a plurality of needles (70) mounted to the tool body (20), each of the plurality of needles (70) mounted to the tool body (20), each of the plurality of needles (70) constructed and arranged to remove material from a work area and deposit material on a work area. Astle further teaches a plurality of plungers (50) moveable in the tool body (20), each of the plurality of plungers associated with a corresponding one of the plurality of needles (70), wherein each of the plungers (50) has a passageway that allows fluid flow through the plunger and a controller (300) constructed and arranged to individually address each of the passageways so that flow in each of the passageways is individually controlled. The controller (300) comprises a plurality of actuators/clamp motors each of the actuators/clamp motors capable of opening and closing a corresponding

passageway. The plurality of actuators/clamp motors includes a membrane valve (140 and 82) controls fluid flow with respect to a corresponding passageway. The controller (300) comprises a plurality of control switches (LS1-LS9) that provides signals to the plurality of actuators/clam motors (CM) to open and close a corresponding passageway. Astle further teaches wherein closing of a passageway of a plunger (50) results in one of drawing fluid into or expelling fluid from a corresponding needle when the plunger (50) is moved in the tool body. Astle further teaches wherein one portion of each plunger (50) is secured to a first portion (52) of the tool body (20) and a second portion of each plunger (50) is slidably engaged with a channel (60) in a second portion (40) of the tool body (20) such that the movement of the first portion (52) of the tool body (20) relative to the second portion (40) of the tool body (20) causes a pressure change in each channel (60) for plungers (50) that their passageway closed. The controller includes a first number of membrane valves (140 and 82), each valve associated with a corresponding plunger (50) and controlling flow for the passageway of the plunger (50) and a valve controller (300) constructed and arranged to control each of the membrane valves (140 and 82) by providing signals to the membrane valves (140 and 82) wherein the valve controller (300) is adapted to control the membrane valves (140 and 82) to individually control flow for each passageway. The valve controller (300) is mounted to the tool body (20). The valve controller is adapted to control the membrane valves (140 and 82) to simultaneously control flow for a plurality of passageways.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. **Claims 13 and 16-18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Astle in view of Schultz (US 6033911).

Refer above for the teachings of Astle.

Astle fails to teach the plurality of needles and corresponding membrane valves arranged in an M X N array.

Schultz teaches an automated assaying device comprising a plurality of needles (26) and corresponding membrane valves (30) arranged in an M x N array. (See Figure 2).

It would have been obvious to a person of ordinary skill in the art to provide the device of Astle such that a plurality of needles and corresponding membrane valves arranged in an M X N array as suggested by Schultz in order to increase throughput of the system.

Allowable Subject Matter

7. **Claims 5-7, 11-12, 14-15 and 19-23** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Prior art fails to teach or fairly suggest wherein the valve controller includes a plurality of first valves that each provide an air pressure signal to a corresponding group of membrane valves to control the membrane valves between open and closed states to open and close a corresponding passageway. Prior art fails to teach or fairly suggest the plurality of switches are adapted to provide signals to the addressing valves to individually control flow for each needle.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jyoti Nagpaul whose telephone number is 571-272-1273. The examiner can normally be reached on Monday thru Friday (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JN


Jill Warden
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